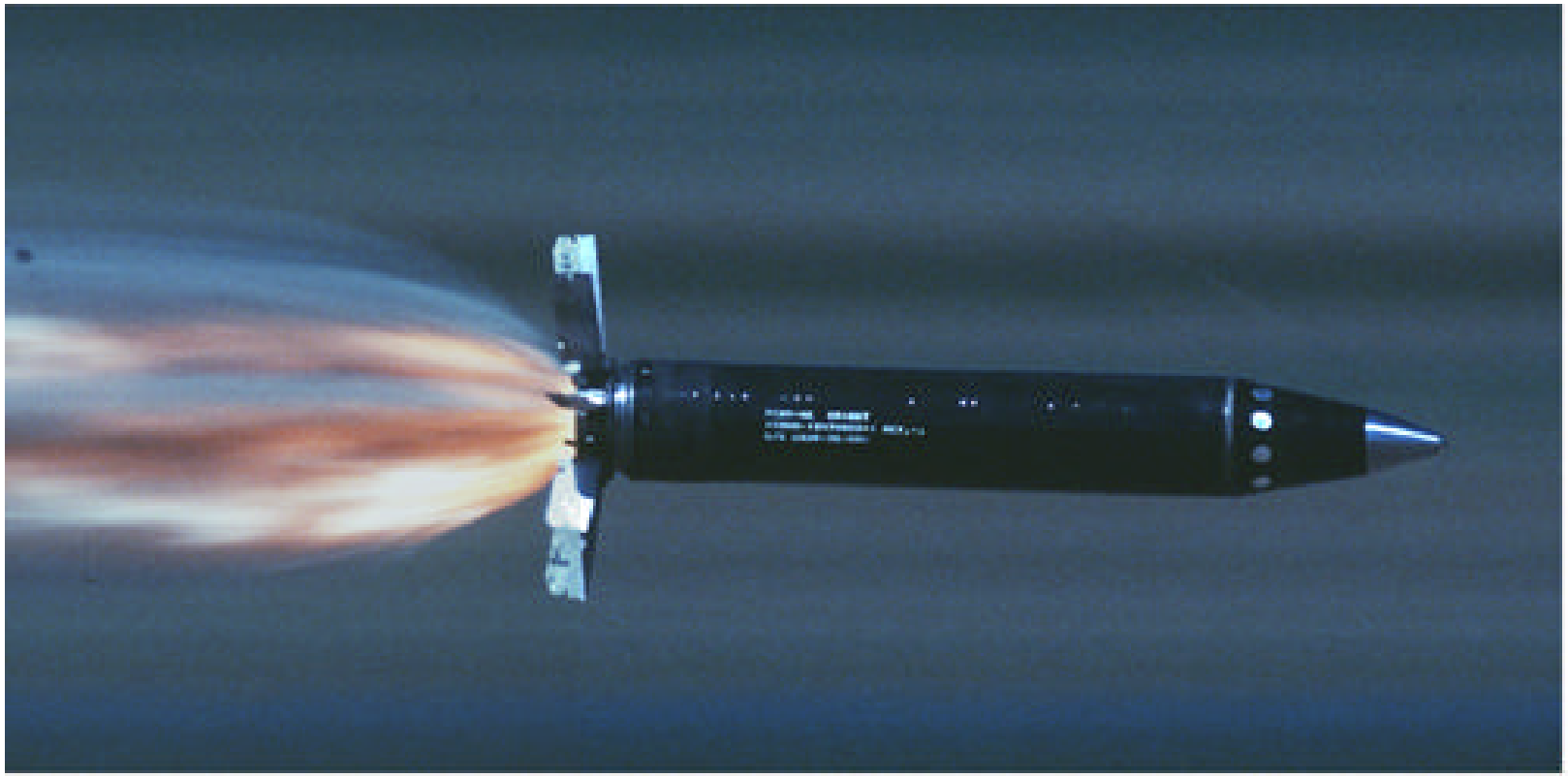
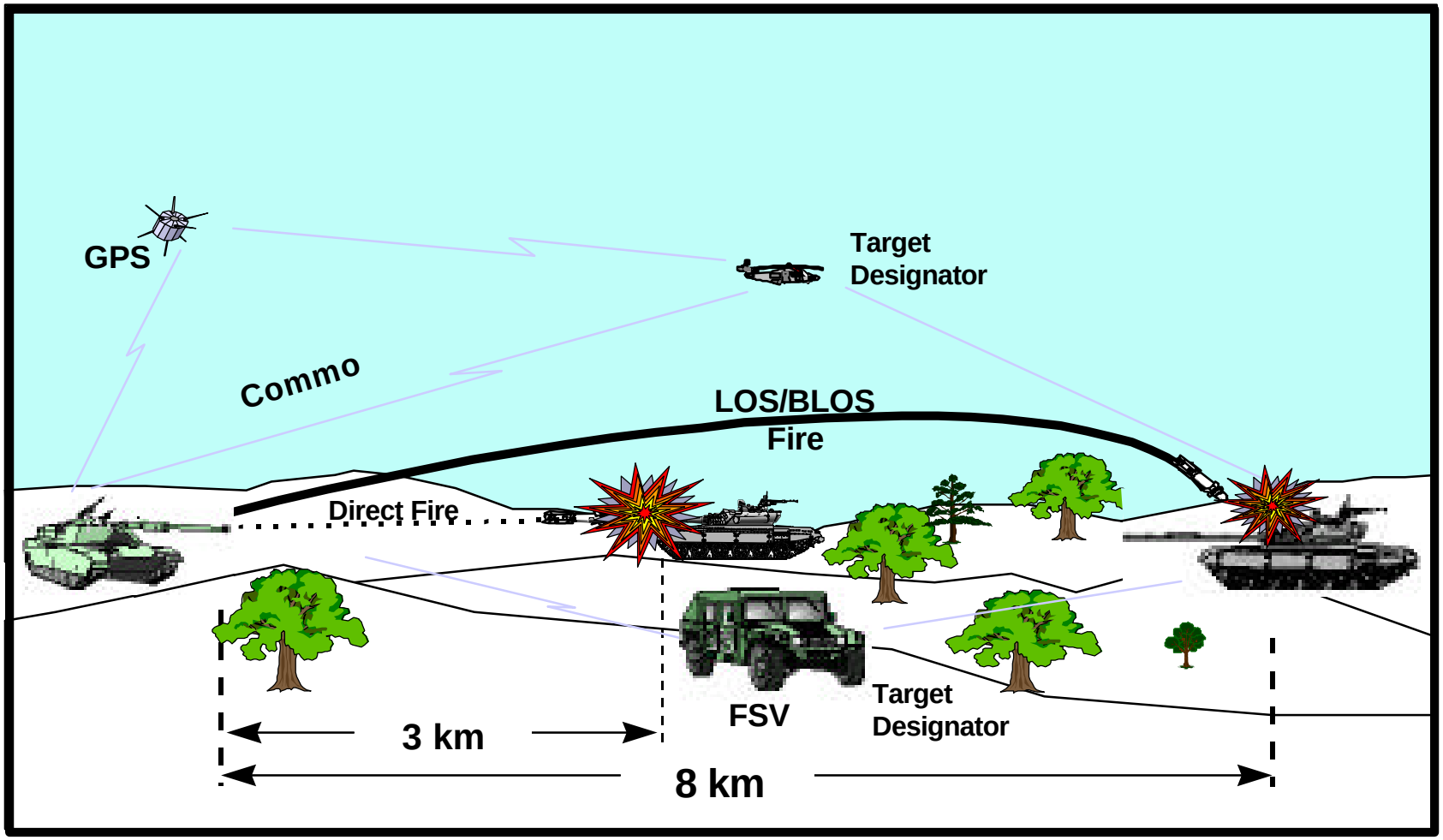
Simulation Based Acquisition (SBA) in XM1007 TERM-KE



TERM-KE Operational Concept

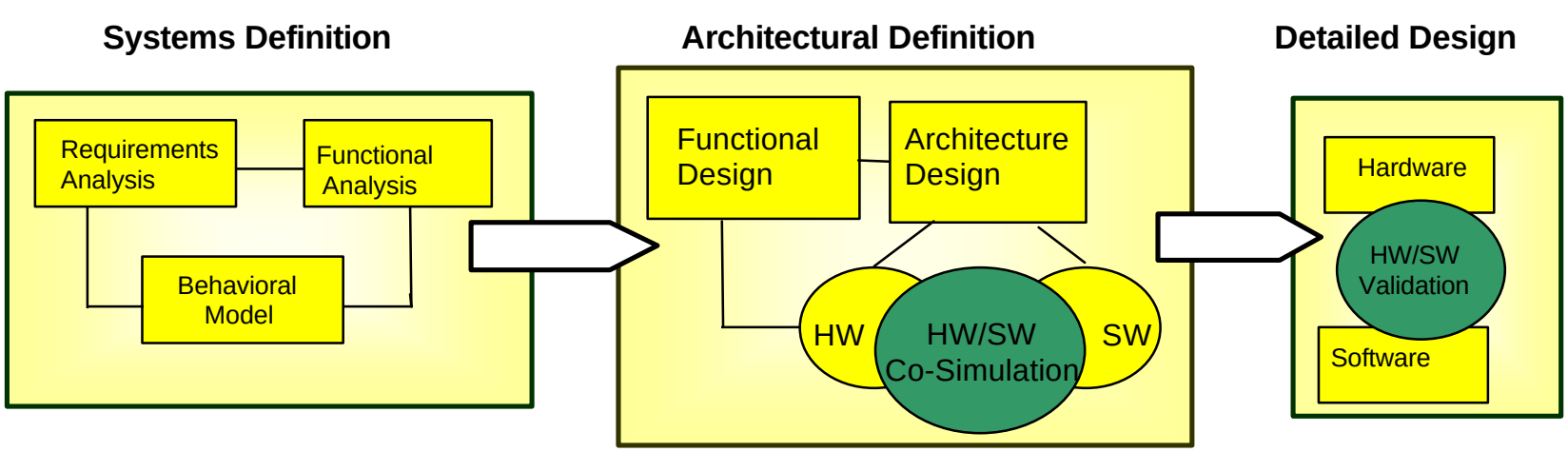


XM1007 TERM-KE's SBA Methodology

- Based on comprehensive design process developed under the DARPA Rapid Prototyping of Application Specific Signal Processor (RASSP) program.

- Methodology anticipates a 4X improvement in design cycle times, cost of design & the quality of design using linked Engineering Design Automation (EDA) tools coupled with concurrent engineering design practices.

RASSP



Executable Specification Using RDD-100

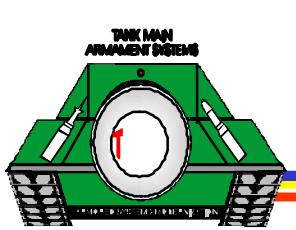
HW/SW Virtual Prototypes using linked EDA Tools

Validated Model Year Architecture

RDD-100

- Is used in the initial phase of the RASSP process, to flow-down requirements, **directly from the customers originating source documents.**
- Flow-down continues through to the final product specifications, needed for detailed design of the hardware & software.
- This permits the developer to decompose & track requirements, define functionality, & model the physical system architecture, deriving the optimum system at the lowest life cycle cost.

SYSTEM DEFINITION



Annex G (TERM)
Tank Ammo ORD

DFD Ft. Knox
Guidance

TERM TECHNICAL
DESCRIPTION

RDD-100

TERM-KE
PERFORMANCE
SPEC

SEEKER Component
Spec

GUIDANCE/CONTROL
Component Spec

LETHALITY Component
Spec

RASSP Modeling

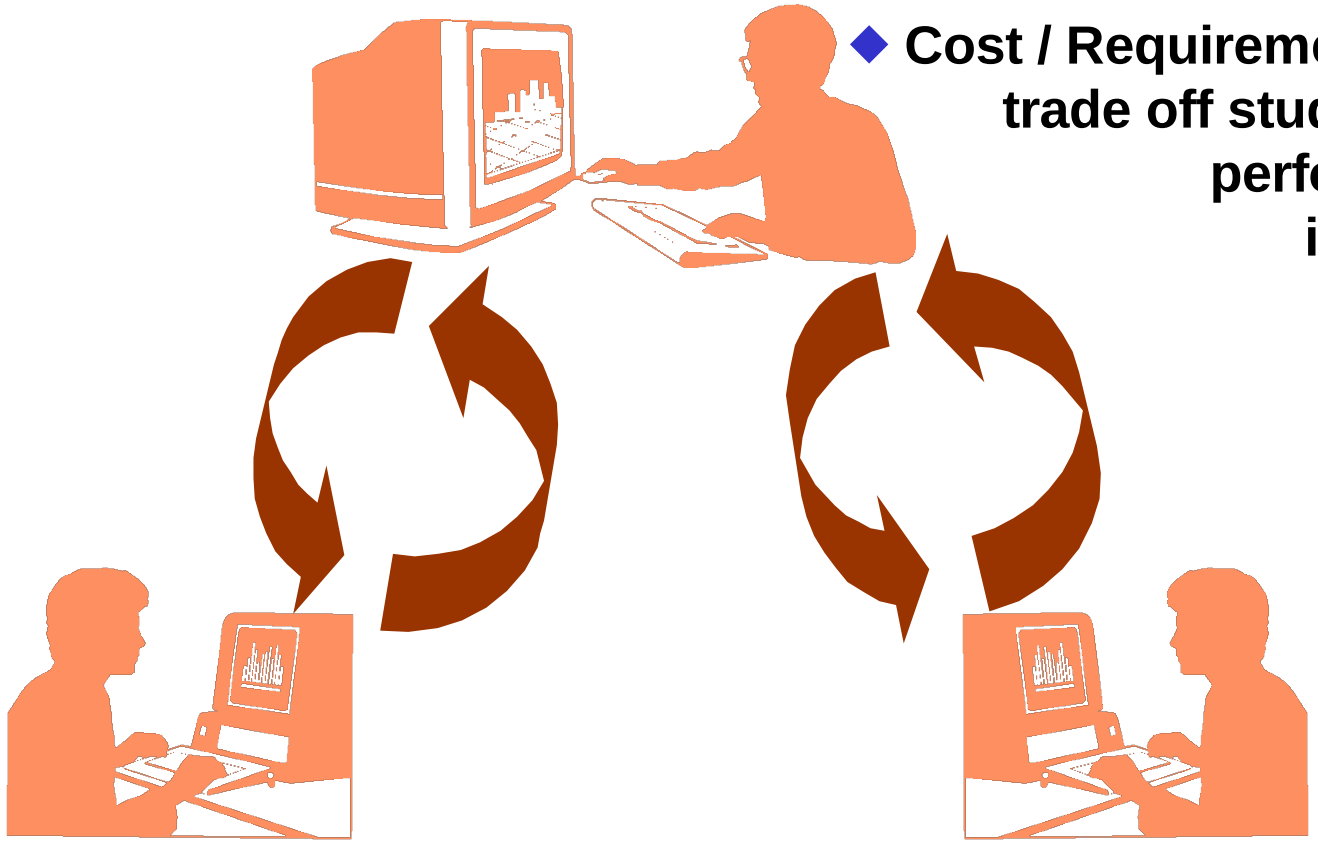
- Following the break down of requirements within RDD-100, the data is automatically processed into executable, architectural simulations of the product systems, and subsystems.
- These simulations automatically mature in parallel with the system requirements, throughout the product life cycle.
- This process, called ***behavioral analysis,*** is the key capability behind the RASSP concept.
- Model Year Architecture provides the most up to date COTS components, that will perform the functions of the final Detailed Design requirements .

Integrated System Engineering (ISE-RASSP)

- In addition to the architectural simulations, the RDD-100 data, ports directly into a variety of other Simulation & Modeling Tools.
-
  - Parametric Cost Estimating Models (PRICE), which produces a Design to Unit Cost Analysis model, & a Life Cycle Cost Analysis model.
  - RAM-ILS which creates Reliability & Maintainability Analysis Models.

RASSP TOOL INTEGRATION

SYSTEMS ENGINEERING
(RDD-100)



- Cost / Requirement / Reliability trade off studies can all be performed through interoperability of the RASSP models

COST ANALYST
(PRICE)

RELIABILITY ENGINEER
(RAM-ILS)